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Subject:	Snake River Local Sediment Management Group		
Client:	PSMP/EIS Project Team, Walla Walla District, Corps		
Project:	Corps PSMP/EIS	Project No:	00000000094685
Meeting Date:	November 6, 2008	Meeting Location:	Quality Inn & Suites; Clarkston, WA
Notes by:	Sharon Edgar, HDR		

Meeting Participants (see attached)

Welcome/Introductions/Agenda Overview *(Carl Christianson, Corps*)
Carl began the meeting by welcoming the group and introducing the US Army Corps of Engineers (Corps)/HDR project team. The purpose of the meeting was for the Corps to reestablish the local sediment management group (LSMG) and to present the status of the Corps's Programmatic Sediment Management Plan/Environmental Impact Statement (PSMP/EIS) since the 2006 LSMG meeting. The group was invited to provide feedback throughout the meeting.

Carl reviewed the meeting agenda:

- Present status/progress to the group
- Discuss the LSMG draft charter
- Present public scoping findings
- Present technical work being prepared to support the PSMP/EIS
- Define the Corps's and LSMG's next steps

The purpose of the PSMP is to develop a long-term (20+ years) plan to manage sediment in the Lower Snake River. The PSMP differs from the Dredged Material Management Plan (DMMP) in that it considers the feasibility of sediment management alternatives, including source control. The PSMP must take into account many different considerations, including ESA listed species, TMDLs, data acquisition, and background levels of sediment. The project study area is about 32,000 square miles. It ends at the Hell's Canyon dam complex and Dworshak dam, which are considered sediment traps.

Carl reviewed the goals of the PSMP. The Corps would like to develop a regional sediment plan using a collaborative process. LSMG invitees included industry, scientific and research community representatives, private citizens, public agencies, and others. A list of invitees was provided in the meeting materials. The Corps's goal is to take a watershed-approach to managing sediment and utilize adaptive management to improve the program, as new information becomes available.

PSMP/EIS Status *(Carl Christianson, Corps*)
The Corps is in the beginning phases of preparing the PSMP/EIS. Various data collection efforts were initiated by the Corps in 2008. Most of these data collection

efforts are designed for 3 years, recognizing that this timeframe may not provide statistically significant results. Carl presented the schedule, which was provided with the meeting materials. Most recently, the Corps has worked closely with the US Forest Service (USFS) and the Environmental Protection Agency (EPA) on information needs and planning approaches.

LSMG History *(Sandy Shelin, Corps)*
LSMG was formed in July 2000 to provide information to the Corps during the development/implementation of the DMMP/EIS. Federal and State regulatory agencies were invited to participate in the process, along with Tribes, local government, environmental groups, and others who had a direct relationship with sediment management efforts. The DMMP focused on dredging, including ways to reduce dredging, beneficial uses of dredged materials, and proposals for habitat creation. The group met again in 2001, then went on hiatus until 2006 when the Corps began working on the PSMP. The National Dredging Team, of which the Corps is a part, guides agencies to use a collaborative approach to managing sediments, which is the purpose of creating LSMG. Carl reviewed the Corps organizational hierarchy and how LSMG fits into the framework.

Review Draft LSMG Charter *(Carl Christianson, Corps*)
The purpose of LSMG is to obtain input throughout PSMP/EIS preparation and implementation. Input is needed on understanding causes and sources of sediment and to evaluate opportunities to manage sediment. The Corps sees LSMG as an excellent source of data, local sediment information, and information about existing programs and studies. The LSMG can review draft products prior to their completion. While the Corps will consider input from LSMG, the Corps retains final approval authority on the PSMP.

Carl opened the meeting for questions and input from the group.

A USFS representative asked if the Corps planned to use LSMG as a resource to disseminate information about the PSMP/EIS to the wider community. If so, he does not think that the Charter clearly explains this intention. Carl Christianson responded that once the Corps is in the implementation phase they will not have the authority in many cases to implement sediment control measures. The more buy in and collaboration that the Corps achieves during the Program's development, the better the chances are of achieving success on a regional level.

Dave Brown with the National Resource Conservation Service asked whether the Corps has involved Washington State University or University of Idaho researchers in sediment modeling efforts. Gregg Teasdale responded that the Corps had not yet contacted these universities because they are still deciding upon their research approach; however they will consider approaching them in the future.

Brad Johnson with Water Resource Inventory Area (WRIA) 35 commented that the purpose of the LSMG should note the need for protection of salmon species in the Snake River, since this is an important issue in the region.

Fred Bennett with Port of Walla Walla asked how this project will affect sediment on the Walla Walla River and the Columbia River. Those lower in the system have an interest in what will be coming downstream and what the Corps will do with sediment when they have to remove it.

Carl reviewed the Corps's proposed LSMG organization that is described in the draft charter, touching on four types of committees currently described. Input and feedback on LSMG's organization is wanted by December 6:

- General Membership
- Executive Committee
- Steering Committee
- Ad hoc Committees

Carl noted that the Corps wants to make sure that they are not duplicating data collection efforts that have been completed by other agencies. Carl asked the group for their thoughts.

Ray Hennekey of Idaho Fish and Game asked how the Corps selected people and organizations to join LSMG, noting that there were people/groups from outside of the region on the invitee list. Carl responded that the Corps invited parties who had been involved previously in the process and those who have a stake in the process. The invitation list is attached to the charter. Also, many of the federal agencies have different regions within the study area, so in some cases the Corps sent the invitation to an agency's home office. Sandy added that some of the environmental groups that were invited were the plaintiffs in the lawsuit. The Corps wanted to make LSMG a manageable size and more of a technical work group. Roy suggested there might be other interest groups that should be invited to participate, and that they have technical input to provide. The Corps is open to suggestions of other groups that should participate in LSMG.

Christine Kelly from EPA asked what the purpose of an executive committee is if Corps has ultimate authority on PSMP/EIS decisions. Carl responded that the EPA has provided lots of feedback to the Corps about this project, and if Corps cannot accommodate all EPA's feedback, these issues could be raised to the regional level via an executive committee to come to an agreement.

Dave Brown of NRCS asked what level of effort is expected from executive committee members. Carl responded that this depends on the level of interest of individual agencies.

Ken Stinson of Latah Conservation District suggested that the Corps expand the text in the charter to further describe the role of each committee. This would help the group know where they want to engage.

Wanda Keefer of the Port of Clarkston suggested that the general members meet more frequently than annually. Dave Brown suggested that meetings be based on the project timeline, rather than creating set dates. Glenn Vanselow from Pacific Northwest Waterways Association (PNWA) suggested that the group should meet when draft information is prepared and when important decisions are being discussed. Carl noted that the Corps will use their website and email to communicate with LSMG.

Nick Gerhardt with USFS pointed out that if enough people want to join the steering committee, then the general membership should take on the steering committee goals if enough people are interested.

The group should contact the Corps by December 6 to let them know how they would like to participate, and to provide any other specific comments on the LSMG charter.

EIS Scoping Summary Findings/Next Steps *(Sandy Shelin, Corps)*
Scoping began in September 2006 with a series of pre-scoping meetings. An LSMG pre-scoping meeting was held in Clarkston in September 2006. Stakeholder meetings were held in October 2006 to February 2007. Public scoping meetings were held in February 2007.

During scoping the Corps received information about local sediment data sources. Sediment reduction was a priority in all the subbasins, and many of the agencies/groups the Corps spoke to wanted funding to implement plans that they have. These plans were on a smaller scale than the PSMP and were mostly targeted at agricultural lands.

Key public scoping comments are summarized below. See scoping summary report for additional detail:

- The Corps should utilize existing information as much as possible, noting that existing data is on a smaller, more detailed scale. Some local agencies feel that they understand local sediment management problems but they need money to implement solutions themselves.
- Plan development and implementation will need to involve coordination with other agencies.
- Concerns about dredging effects on water quality and fish habitat
- Benefit of sediment reduction
- Concerns about flooding in Lewiston
- Concerns about how the PSMP would be funded

The Corps's next steps are to refine the PSMP/EIS strategy based on scoping and to coordinate with various agencies/groups. In addition to LSMG meetings, LSMG and the public can provide input through the Corps project website, or by emailing or calling Carl. Carl clarified that the scope of the project focuses on where problem sediments accumulate.

Wanda Keefer asked if in-water disposal will be excluded from consideration. Carl responded that the Corps would like to utilize in-water disposal options.

Rick Davis with the Port of Clarkston asked if the Corps will no longer be dredging. Carl responded that they are evaluating how to address sediment once deposited. They would like to find ways to lessen sediment inflow so the Corps could reduce the frequency of dredging. Rick stated that the Corps and others need a method to dispose of sediment. Carl noted that the Corps still hopes to do in-water disposal, but it is considered experimental until they can prove its benefits. Monitoring of existing in-water disposal areas is one area of data collection being conducted.

A group member asked if the PSMP will take into account activities by non-federal players/actions of non-federal lands. Carl replied that the Corps hadn't considered this and they will take into consideration addressing some private entities' actions as they relate to consistency associated with permitting.

Glenn Vanselow expressed concern that the Corps consider the Port's need to dredge when the PSMP/EIS is developed and stated that the PSMP/EIS should be a sediment

program for everyone, not just federal agencies. Sandy and Carl confirmed that they will consider this.

Technical presentations

Sediment analysis and modeling (Gregg Teasdale, Corps)

Gregg explained a breakdown of land cover types in the sediment delivery watershed. The two main types are forest land and agricultural lands. Forest land has more episodic sediment events while agricultural lands have more predictable, constant disturbance. The Corps is trying to develop this plan to manage sediment beyond 20 years, but the long-term timeframe has not been decided yet.

Gregg discussed the confluence modeling, standard project flood modeling, and sediment range survey that the Corps is working on. He discussed the hypothesis that sediment is building to dynamic equilibrium at the confluence. The Corps is working on developing the probable maximum flood, which will be used in modeling. Gregg answered a series of questions from the group:

- The Snake River portion of the McNary Pool is within the study area
- Pacific Northwest National Lab did a study in the 1990s and determined that primarily fine sediment (including sand) is being deposited in the Lower Snake Reservoirs.
- Gregg does not think that the silt from Dworshak dam can be controlled when the dam is flushed.
- There were large dredging projects in the 1980s for flood and navigation purposes that may explain the dip in sediment shown on his graph for that time.

Lower Snake Basin Sediment Yield Approach (Gregg Teasdale, Corps)

Gregg discussed the Corps's approach to forecasting sediment yield. Gregg noted that there is a downward trend of sediment accumulation in the Palouse River. This could be the result of conservation practices. Gregg briefly discussed some USGS efforts the Corps is funding (see Greg Clark's presentation below) to repeat a sediment study from the 1970s. He noted the increased importance of fire in the basin over the past 30 years and its effects on sediment transport.

Sediment Analysis on Forest Lands (Bill Elliot, USFS)

Bill Elliot from the USFS presented the main considerations for sediment analysis on forest lands:

1. *Landscapes.* There are differences in sediment contributions from forest, rangeland, agriculture, or wilderness lands. Different landscapes have different climates.
2. *Hydrologic and Erosion Processes.* In forests, most erosion comes from wildfires. The second largest source is roads. Sediment storage between runoff events must be considered, as does the interaction between surface and groundwater.
3. *Timing*. Fire happens on a decades to centuries timescale. Floods also have an extensive timeframe. We need to consider long term processes to properly understand and manage sediment.
4. *Human Values*. Assess value versus risk.
5. *Interactions*. Interactions between items 1 through 4 must be considered. The interaction of these elements makes sediment difficult to manage.

Snake River sediment sampling (Greg Clark, USGS)
The USGS is working on a 3-year Sediment Load Monitoring Plan to measure sediment load to the Snake River at Anatone and Clearwater River at Spalding. USGS completed a study measuring sediment loads at these points in the 1970s, showing that the Snake River delivered more sediment on average than the Clearwater River (approximately 80 percent of the sediment load at the confluence of the Snake and Clearwater rivers was coming from the Snake). The Corps and USGS are repeating this study to determine if sediment load has changed. Looking at the first year of preliminary data, the sediment load at these points does not appear to have changed much since the 1970s. Additional data will be collected over the next two years to verify current conditions. Greg asked the group for questions.

A group member asked if monitoring is being done near the mouth of the Grande Ronde. Greg responded that the USGS is looking into working in multiple subbasins.

A group member asked if Greg was surprised there was no cobble or large rocks in the pool. Greg responded that he is not sure where the heavier sediment is depositing out.

A group member asked whether the sediment from the 1997 flood event was bedload or suspended sediment. Gregg replied that the Corps is looking at coring sediment mounds to determine distribution so they will be able to tell if it is bedload or suspended.

A group member asked whether proposed sampling locations will have the same level of monitoring as the two main sampling locations. Greg responded that it depends on what they are trying to measure.

Sediment Surrogates for the Clearwater and Snake Rivers (Molly Wood, USGS)
The USGS is looking for a method to measure sediment load in water by measuring certain other water parameters. The ability to measure such a "surrogate" could provide the Corps with indirect, continuous measurements of sediment. USGS is testing three surrogate technologies:

- Backscatter from acoustic velocity meters
- Laser diffraction
- Turbidity

The USGS installed all three surrogates in the Clearwater River in 2008 and installed a turbidity meter in the Snake River. So far, the two acoustic devices appear to be the best predictors on the Clearwater River.

If USGS is successful in developing a sediment surrogate, this could give the USGS and the Corps increased accuracy in predicting sediment loads. The USGS plans to continue monitoring for another year and to add acoustic velocity meters to the Snake River. Molly opened the floor for group questions.

A group member asked about surrogate calibration. Molly replied that calibration is extremely site specific.

A group member noted that the spike in sediment in early August correlates to a cloud burst in the Grande Ronde River.

A group member asked whether Dworshak dam was operating during the 1970s sediment study and whether this affected sediment. The dam was operating but the Lewiston dam on the Clearwater River was (re)moved when Lower Granite Dam was constructed on the lower Snake River.

Biology (Chris Pinney, Corps)
The Corps has been studying fall Chinook redds in the basin. They are beginning to find redds again below Little Goose, Ice Harbor, and Lower Granite. They are still not finding redds at Lower Monumental even though it appears to have suitable habitat (velocity may not be conducive to fish). Redds are still associated with outfall pipes.

The Corps is also surveying shallow water habitat to better understand fall Chinook use/preference patterns. They have initiated the first year of this 3 year study. The first phase of this study involved studying suitable habitat and comparing macroinvertebrates and sediment sizes to that in constructed shallow habitat. The second phase of this study is radio-tagging or acoustic-tagging to learn about habitat preferences and determine why fall Chinook are not in areas that are believed to be suitable habitat. The Corps will be completing a synopsis of fall Chinook research soon and the report should be complete in April 2009.

Water Quality (Steve Juul, Corps)
A year-round limnological data collection program consisting of monthly sampling in the lower Snake River at nine historical locations was initiated in May. The purpose of this effort is to update the existing water quality database with field (e.g., temperature, dissolved oxygen, conductivity, pH, turbidity, and light attenuation), chemical (e.g., alkalinity, nutrients, common anions and cations, metals, and total suspended solids) and biological (e.g., phytoplankton, zooplankton, and chlorophyll a) data. This information will be used in concert with previously collected data to (1) elicit spatial/temporal trends and (2) provide winter-time water quality data that will be needed to complete the EIS.

Real-time monitoring for temperature, dissolved oxygen, pH, conductivity, and turbidity has also been initiated at four locations within the lower Snake River system. This hourly data will provide useful information regarding background conditions, as well as help define inherent system variability.

Wrap up/Next Steps
Carl thanked everyone for coming and asked the group for final thoughts and questions. A group member commented that the Corps is not able to identify where sediment is coming from and that the Corps should consider refining monitoring systems to isolate specific streams. Gregg replied that the he agrees with the comment and the Corps is looking at expanding the program at various rivers to be able to better understand where sediment is coming from. Carl noted that the Corps has to take budget and resources into consideration when refining data.

A group member commented that most of the annual sediment spikes occur during June, July, and August, which is thunderstorm season. He suggested that the Corps monitor sediment while considering weather patterns. He also noted that the National Weather Service archives weather data. Gregg added that where weather stations are located affects how they are incorporated into modeling. Another issue is the long-term effect of climate change, which is hard to predict.

The presentations from the LSMG meeting will be put on the project website. The scoping summary is also available on the website. If there is any feedback, please contact Carl by phone at (509) 527-7260 or by email at Carl.J.Christianson@usace.army.mil.

Action Items

- Finalize charter after December 6 comments received from LSMG
- Determine meeting frequency and group structure based on feedback received
- Continue current study efforts
- Future LSMG meetings will be scheduled in 2009